

Response to Final Office Action  
Docket No. 013.0226.US.UTL

**Amendments to Specification**

On page 1, lines 4-6, please replace the existing title with the following title:

SYSTEM AND METHOD FOR ARRANGING CONCEPT CLUSTERS  
IN THEMATIC RELATIONSHIPS IN A TWO-DIMENSIONAL VISUAL  
5 DISPLAY SPACE AREA

On page 6, lines 20-29, please replace the existing paragraph with the following  
substitute paragraph:

Each cluster 17 represents a grouping of one or more points in a  
virtualized concept space, as further described below beginning with reference to  
10 FIGURE 3. Preferably, the clusters 17 are stored as structured data sorted into an  
ordered list in ascending or descending order. In the described embodiment, each  
cluster represents individual concepts and themes extracted from a set of  
documents 21 and categorized based on, for example, Euclidean distances  
calculated between each pair of concepts and themes and defined within a pre-  
15 specified range of variance, such as described in common-assigned U.S. Patent  
~~Application Serial No. 09/944,475, filed August 31, 2001, pending No. 6,888,548,~~  
issued May 3, 2005, the disclosure of which is incorporated by reference.

On page 6 line 30 through page 7 line 10 please replace the existing paragraph  
with the following substitute paragraph:

20 The cluster display system 11 includes three modules: classifier 18,  
placement 19, and display and visualize 20. The classifier module 18 sorts a list  
of clusters 17 into either ascending or descending order based cluster sizes. The  
placement module 19 selects and orients the sized clusters to properly visualize  
independent and dependent variables while compressing thematic relationships  
25 for visual display. The ~~reorient~~ placement module 19 logically includes a list  
building submodule for creating sublists of placeable clusters 17, a cluster  
placement submodule for placing clusters 17 into displayable groupings, known

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as "groupers," and a grouper placement submodule for placing the groupers within a visual display area. Finally, the display and visualize module 20 performs the actual display of the clusters 17 via the display 14 responsive to commands from the input devices, including keyboard 12 and pointing device 13.

- 5 On page 7 line 27 through page 8, line 5, please replace the existing paragraph with the following substitute paragraph:

FIGURE 2 is a graph showing, by way of example, a corpus graph 30 of the frequency of concept occurrences generated by the system of FIGURE 1. The corpus graph 30 visualizes concepts extracted from a collection of documents 21  
10 (shown in FIGURE 1) represented by weighted clusters of concepts, such as described in commonly-assigned U.S. Patent ~~application Serial No. 09/944,474, filed August 31, 2001~~ No. 6,978,274, issued December 20, 2005, pending, the disclosure of which is incorporated by reference. The x-axis 31 defines the individual concepts for all documents 21 and the y-axis 32 defines the number of  
15 documents 21 referencing each concept. The individual concepts are mapped in order of descending frequency of occurrence 33 to generate a curve 34 representing the latent semantics of the documents set.

On page 8 line 20 through page 9 line 2, please replace the existing paragraphs with the following substitute paragraphs:

- 20 In the described embodiment, cluster size equals the number of concepts contained in the cluster. The cluster spine ~~[[41]]~~ 42 is built by identifying those clusters 44-46 sharing a common theme. A theme combines two or more concepts 47, which each group terms or phrases (not shown) with common semantic meanings. Terms and phrases are dynamically extracted from a  
25 document collection through latent concept evaluation. During cluster spine creation, those clusters 44-46 having available anchor points 48 within each cluster spine ~~[[41]]~~ 42 are identified for use in grafting other cluster spines

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sharing thematically-related concepts, as further described below with reference to FIGURE 5.

5 The cluster spine ~~[[41]]~~ 42 is placed into a visual display area to generate a two-dimensional spatial arrangement. To represent data inter-relatedness, the clusters 44-46 in each cluster spine ~~[[41]]~~ 42 are placed along a vector 44 arranged in decreasing cluster size, although other line shapes and cluster orderings can be used.